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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,115	12/07/2000	Terrance J. Dishongh	42P10041	1363

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INTEL/BLAKELY
12400 WILSHIRE BOULEVARD, SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER	
DINH, TUAN T	

ART UNIT	PAPER NUMBER
2841	

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/732,115	DISHONGH ET AL.	
	Examiner	Art Unit	
	Tuan T. Dinh	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 30-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 30-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 December 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The request filed on 11/21/05 for a Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 09/732,115 is acceptable and a RCE has been established. An action on the RCE follows.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "***said carbon based cladding of said second signal line is continuous with said carbon based cladding of said first signal line*, claim 3,** the carbon based cover of one of the conductive elements connected to another carbon based cover of another of the conductive elements, claim 31, said carbon-based cladding of said first signal line is contiguous with said second signal line, claim 39" must be shown or the feature(s) canceled from the claim(s).

Note: in claims 1-2, the applicant recites "said first and second signal lines each including an elongated electrically conductive member that is enshrouded with a carbon cladding over at least a portion of the conductive member" ***would not be shown in figure 7 because the element 26 does not enshroud the signal line in which claim in claim 1***.

No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

There is no structure in the drawings to describe the limitation of claim 3, which is dependent on claims 2/1. What does the features in the drawings (figures) to shows the limitation as claimed in claim 3?

Note: figures 3-8 are diagrams illustrating a process for manufacturing a PCB and figure 8 is a final product, the element 26 is remove after an element 32 being formed.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3, 31, 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 3, it is unclear because the examiner is confusing how the cladding of the second signal line being continuous with the cladding of the first signal line. Also, there is no structure (of the final product) to show in the drawing (figures 2 and 8) the limitation as claimed in claim 3.

Regarding claim 31, it is unclear because the examiner is confusing how the carbon based cover of one of the conductive elements connected to another carbon based cover of another of the conductive elements. Also, there is no structure (of the final product) to show in the drawings (figures 2 and 8) the limitation as claimed in claim 31.

Regarding claim 39, it is unclear because the examiner is confusing how the cladding of the second signal line being contiguous with the cladding of the first signal line. Also, there is no structure (of the final product) to show in the drawing (figures 2 and 8) the limitation as claimed in claim 39.

Regarding 37, it is unclear because in claim 36, the applicant states "a carbon based cladding...***approximately equal*** or greater than 60% by weight" so how can the

carbon concentration being approximate equal to 60% and can be approximate 99% by weight? It is contradiction.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-2, 4-5, and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Sandhu (U.S. Patent 6,084,302).

As to claims 1-2, Sandhu discloses a printed circuit board (substrate 5, column 3, lines 1-2) as shown in figures 1-3 comprising:

a dielectric board member (10, column 3, line 1); and

first and second signal lines (interconnections 15, column 2, line 67) are adjacent and supported on said dielectric board member (10), said first and second signal lines (15) including first and second elongated electrically conductive member that is enshrouded (**covered or surrounded, see specification page 3, line 9**) by carbon-based claddings (25, column 4, lines 60-61, column 5, lines 1-5) over ***at least a portion*** of an elongated conductive member length.

As to claim 4, Sandhu discloses said carbon-based cladding (25) of said second signal line (15) is discontinuous with said carbon-based cladding of said first signal line, see figure 3.

As to claim 5, Sandhu discloses the PCB as shown in figures 1-3 further comprising a second dielectric board member (30, column 5, lines 25-27) disposed above said first dielectric board member (10) and said first signal line (15).

As to claim 8, Sandhu discloses said carbon-based cladding (25) has a dielectric constant that is greater than a dielectric constant associated with said first dielectric board member because the carbon based cladding having carbon and metal which is less resistive, and a dielectric board has a rigid resistance made of dielectric oxide.

6. Claims 30-31, and 33-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Noorily (U.S. Patent 4,616,102).

As to claims 30-31, 33-35, Noorily discloses a carbon-based cladding structure as shown in figure 1 comprising:

a carbon-based cover (32, column 3, lines 23-24); and

a dielectric board member (20, column 3, line 12) having a plurality of conductor elements (26,28,30), at least one of said plurality of conductor elements, which are signal lines fully covered over top, bottom, and side portions thereof with said carbon-based cover (32), see figure 1, said cover of one of the conductive element is connected to another cover of another of the conductive elements, and a second dielectric member (14) located above the cover (32).

Regarding claim 33, Noority discloses said carbon-based cover has a dielectric constant that is greater than a dielectric constant associated with said dielectric board member.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 6-7, 36-38, 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandhu ('302) in view of Kaneyoshi et al. (EP 0388545 A1, hereafter EP).

Regarding claims 6-7, Sandhu does not specific disclose the cladding covered over top, bottom, and side portions or greater than 90% surface of the conductive member.

EP shows the cladding (8) covered the core (7). Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a teaching of EP applied on the PCB of Sandhu in order to provide excellent shield or ground.

As to claims 36-38, 40, Sandhu discloses a printed circuit board (substrate 5, column 3, lines 1-2) as shown in figures 1-3 comprising:

a dielectric board member (10, column 3, line 1); and

first and second signal lines (interconnections 15, column 2, line 67) atop said dielectric board member (10), a second dielectric member (30) located over said signal lines, said first and second signal lines (15) are enshrouded (**covered or surrounded, see specification page 3, line 9**) by carbon-based claddings (25, column 4, lines 60-61, column 5, lines 1-5).

Sandhu does not specific disclose the cladding having a carbon concentration approximate equal to or greater than 60% by weight.

EP shows a shielding cable in figure 3 comprising a carbon cladding (8) made by carbon fibre, which is a carbon covered conductor cores (7), see column 2, lines 19-20.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a teaching of EP applied on the PCB of Sandhu in order to provide excellent shield or ground.

Regarding claim 41, Sandhu does not specific disclose the cladding covered over approximately 90% surface of the conductive member.

EP shows the cladding (8) covered the core (7). Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a teaching of EP applied on the PCB of Sandhu in order to provide excellent shield or ground.

9. Claims 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noorily ('102) in view of EP-0388545 A1.

Regarding claim 32, Noority does not specific discloses the cover is formed at least 60% of carbon by weight.

EP shows a shielding cable in figure 3 comprising a carbon cladding (8) made by carbon fibre, which is a carbon covered conductor cores (7), see column 2, lines 19-20.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a teaching of EP applied on the PCB of Sandhu in order to provide excellent shield or ground.

Response to Arguments

Applicant's arguments filed 11/21/05 have been fully considered but they are not persuasive. Applicant argues:

Sandhu does not disclose a carbon based cladding. Examiner disagrees because a barrier cladding layer is formed by cartide, see column 5, line 3.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T. Dinh whose telephone number is 571-272-1929. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan Dinh
February 02, 2006.